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EXAMINER

FILIPCZYK, MARCIN R

ART UNIT PAPER NUMBER

2161

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,022

Applicant(s)

RHOADES, JOHN

Examiner

Marc R. Filipczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/20/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Response to Amendment

This action is responsive to Applicant's response filed on July 7, 2005. Claim 14 is cancelled, claims 26-36 have been previously withdrawn, and claims 1-13 and 15-25 are pending.

To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. amendments, 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).

Information Disclosure Statement (IDS)

The IDS received on May 20, 2005 is noted.

Claim Rejections - 35 USC § 112

The following is a quotation of the **second paragraph** of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 21-23, the segment "the skipped bits" is indefinite. It is not clear what bits are skipped if any in the input key.

Claims 1 and 21-23 recite the limitation "the skipped bits". There is insufficient antecedent basis for this limitation in the claims.

Claims 2-20, 24 and 25 depend from claims 1 and 23 respectively, and are therefore rejected on the same basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-13 and 15-25 are rejected under 35 U.S.C. 103(a) as best as the Examiner is able to ascertain as being unpatentable over Greene (U.S. Patent No 6,631,419) in view of Wilkinson III et al (U.S. Patent No. 6,014,659).

Regarding claims 1 and 21-25, Greene discloses a system and method, wherein a look up engine (fig. 1, 106, Greene) comprising a storage means for storing a plurality of entries (fig. 1, 108, Greene), each entry comprising a value, an associated key value (col. 7, lines 32-34, Greene) and a skip value (figs. 1-5 and col. 7, lines 36-50 and col. 8, lines 36-50, Greene), such that, in operation, a look up is carried out by outputting a value which is associated with the stored key value which matches an input key value (Fig. 1, values D1, D2 and col. 4, lines 49-52, col. 7, lines 34-36, Greene), the input key comprising a plurality of bits such that, if the skipped bits of the input key value and the associated skip value mismatches, an error message is output to indicate lookup failure (col. 9, lines 10-15 and 35-48, Greene; *Note: if there is no match, an error flag may be displayed*) the look up engine being capable to perform multiple look ups by cascading multiple systems (fig. 1, 106 and 108, and col. 7, lines 10-18 and col. 31, lines 60-67,

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Greene), but does not explicitly teach the look up engine comprises a plurality of look up state machines connected in parallel to enable multiple look ups concurrently.

However, search engines are notoriously well known to comprise multiple state machines to handle multitasking. For instance, Wilkinson discloses prefix matching database searching (see title and abstract, Wilkinson) where he teaches a number of registers and elementary state machines operating concurrently, collectively known as a search engine, to directly access memory (fig. 3, item 40, col. 8, lines 2-4 and col. 15, lines 21-25, Wilkinson). Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Greene and Wilkinson systems by modifying Greene's look up engine to include the plurality of look up state machines taught by Wilkinson to support Greene's multiple input strings and multiple memories to operate concurrently as suggested by Greene (col. 31, lines 60-64, Greene) and taught by Wilkinson.

Regarding claim 2, Greene/Wilkinson teach entries are stored in a trie structure (col. 7, lines 27-37, Wilkinson).

Regarding claim 3, Greene/Wilkinson teach the trie structure is a PATRICIA trie structure (col. 3, lines 15-22 and 30-58, Greene).

Regarding claim 4, Greene/Wilkinson teach input and output buffers (fig. 1, item 102 and col. 6, lines 47-56, Greene).

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Regarding claims 5 and 6, Greene/Wilkinson teach distributing and collecting the input key values and respective outputs (fig. 1, items 14, 20, 22 and 40, col. 9, lines 63-66, Wilkinson).

Regarding claims 7 and 8, Greene/Wilkinson teach the length of the look up values and key values is fixed and/or variable (fig. 17 and col. 2, lines 7-21, Greene).

Regarding claim 9, Greene/Wilkinson teach tagging keys (col. 26, lines 32-49, Greene).

Regarding claim 10, Greene/Wilkinson teach storing an identity of the requestor such that the output value is sent to the correct location (fig. 3, item 14, Wilkinson).

Regarding claims 11-13, Greene/Wilkinson teach a type of error and identifying the location of bits that are mismatched (fig. 5, BIT MASK, and col. 31, lines 14-22, Wilkinson).

Regarding claims 15-20, Greene/Wilkinson teach internal/external memory and partitioning the memory comprising plurality of entries (fig. 1, item 108: M1, M2, M3 and col. 7, lines 14-18, Greene).

Response to Arguments

Applicant's amendment and arguments filed July 7, 2005 have been fully considered but they are not persuasive. The arguments and responses are listed below.

Applicant argues on pages 10-12 of the 7/7/05 response that the present amendment should overcome all the 35 U.S.C 101 and 112 rejections.

Examiner agrees. Applicant's carefully amended claims have overcome previously raised 35 U.S.C 101 and 112 rejections, however, a new indefinite issue was presented and is rejected accordingly (please see rejection).

Applicant argues on pages 12 and 13 of the 7/7/05 response that the cited prior art does not disclose each entry includes a skip value field.

Examiner disagrees. Green system is concerned with longest prefix and masked prefix table searching (see abstract and figures 1-5). It is well known to those of ordinary skill in the related art that masked searching involves skipping or letting specific bits through based on operation using logical operators for comparison. For more information please refer to the rejection above.

Applicant argues on page 15 of the 7/7/05 response that "All of the finite state machines reference the same lookup table data".

Examiner disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., same lookup table) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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With respect to all the pending claims 1-13 and 15-25, Examiner respectfully traverses Applicant's assertion based on the discussion and rejections cited above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R. Filipczyk whose telephone number is (571) 272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF

September 12, 2005

Frantz Coby
FRANTZ COBY
PRIMARY EXAMINER